

Catalyst Healthcare Analytics Database Project

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Executive Summary

Catalyst Healthcare Analytics, a company that specializes in medical auditing, has faced challenges in project management tracking due to a lack of a database system. Currently, Catalyst is looking for a productive solution to track active and completed projects within different departments of the company. This database aims to display projects that are active or completed and the employees that are currently working on them in a relational database. The scope of the project is to create project and employee tables that have relationships and are user-friendly. The project utilized Microsoft Access to create and design a relational database between 'Project' and 'Employees' tables. The established relationships between these two tables enable accurate retrieval of project information and who is currently working on them. In addition, user-friendly forms were created for data entry and efficient data retrieval. In conclusion, the Catalyst database project successfully addresses the challenges faced in managing projects and employees. The database also enhances data accuracy, reduces redundancy, and provides a solid foundation for other potential databases in the company.

1.0 Introduction

Catalyst Healthcare Analytics specializes in medical auditing services to clients such as insurance companies. Effective project management is essential to Catalyst to ensure timely completion of medical audits. In response to the challenge of tracking department dashboards efficiently, a database project has been initiated to track project timelines, ensure accurate information are regularly maintained, and implement security measures to safeguard sensitive project and employee information. Key terms used in this database project include project, which are defined with projected start and end dates. The employee table describes information about an individual associated with Catalyst such as full name, current role, and date of birth. Another key term is database which is a system on access that is designed to store, organize, and manage project and employee data.

2.0 Methodology

- **Tables**

- There are two tables in the database, the employee and project table. The project table's attributes are project ID, project name, start date, end date, and status. The employee table's attributes are employee ID, last name, first name, date of birth, employee role, and a foreign key of project ID. These tables are created in Microsoft Access 2013.
 - The tables listed in Database Design Language (DDL) format below:
 - Project (ProjectID, ProjectName, StartDate, EndDate, Status)
 - Employee (EmployeeID, FirstName, LastName, DateOfBirth, EmployeeRole, ProjectID)
- SK LastName
- FK ProjectID → Project

- The relationship between the two tables is that an employee can only be engaged in one project. Multiple employees can be engaged in a single project.

- **Forms**

The image shows a screenshot of a web form titled "Project". The form contains five input fields:

Field Name	Value
ProjectID	001
ProjectName	Reporting Dashboard
StartDate	1/1/2023
EndDate	3/15/2023
Status	Completed

- The purpose of the project form is to allow users to input data into a user-friendly interface such as project name, start date, and end date. The project form also ensures that only accurate and valid information is entered such as valid date ranges. In addition, the project form allows users to establish relationships between projects and employees and can be further used to create queries for insights.

Employee

EmployeeID	<input style="width: 90%;" type="text" value="101"/>
LastName	<input style="width: 90%;" type="text" value="Kumar"/>
FirstName	<input style="width: 90%;" type="text" value="Ashima"/>
DateOfBirth	<input style="width: 90%;" type="text" value="12/19/1994"/>
EmployeeRole	<input style="width: 90%;" type="text" value="Data Team Lead"/>
ProjectID	<input style="width: 90%;" type="text" value="002"/>

- The purpose of the employee form is to allow users to input data into a user-friendly interface such as employee name, role, and full name. The employee form also ensures that only accurate and valid information is entered such as valid date of birth range. In addition, the employee form allows users to establish relationships between projects and employees and can be further used to create queries for insights.

- **Queries**

- List all columns from the project table where the project status is active.

- ```
SELECT *
FROM Project
WHERE Status = 'Active';
```

- Result:

| Active Projects |                    |           |           |        |
|-----------------|--------------------|-----------|-----------|--------|
| ProjectID       | ProjectName        | StartDate | EndDate   | Status |
| 004             | Outreach Dashboard | 4/5/2023  | 6/25/2023 | Active |
| 005             | Appeals Dashboard  | 5/20/2023 | 7/10/2023 | Active |

The purpose of this query is to obtain a list of all active project projects from the project table. This query is useful to track ongoing projects within the organization.

- Display all project information and number of employees for each project.
  - `SELECT Project.ProjectID, Project.ProjectName, COUNT(Employee.EmployeeID) AS EmployeeCount FROM Project LEFT JOIN Employee ON Project.ProjectID = Employee.ProjectID GROUP BY Project.ProjectID, Project.ProjectName;`
- Result

| Count of people on projects |                          |               |
|-----------------------------|--------------------------|---------------|
| ProjectID                   | ProjectName              | EmployeeCount |
| 001                         | Reporting Dashboard      | 2             |
| 002                         | Data Analytics Dashboard | 2             |
| 003                         | Clinical Dashboard       | 2             |
| 004                         | Outreach Dashboard       | 2             |
| 005                         | Appeals Dashboard        | 2             |

The purpose of this query is to generate a datasheet that shows the project ID, project name, and count of employees associated with that project. This query can be useful for understanding employee distribution across different projects and potentially assessing resource allocation.

### 3.0 Results

- **Reports**

```
SELECT *
FROM Project
WHERE Status = 'Active';
```

#### Active Projects

| ProjectID | ProjectName        | StartDate | EndDate   | Status |
|-----------|--------------------|-----------|-----------|--------|
| 004       | Outreach Dashboard | 4/5/2023  | 6/25/2023 | Active |
| 005       | Appeals Dashboard  | 5/20/2023 | 7/10/2023 | Active |

- This report shows the current active projects along with their project ID, project name, and start and end dates of the project.

```
SELECT Project.ProjectID, Project.ProjectName, COUNT(Employee.EmployeeID)
AS EmployeeCount FROM Project LEFT JOIN Employee ON Project.ProjectID =
Employee.ProjectID GROUP BY Project.ProjectID, Project.ProjectName;
```

| Count of employees on all projects |                          |               |
|------------------------------------|--------------------------|---------------|
| ProjectID                          | ProjectName              | EmployeeCount |
| 001                                | Reporting Dashboard      | 2             |
| 002                                | Data Analytics Dashboard | 2             |
| 003                                | Clinical Dashboard       | 2             |
| 004                                | Outreach Dashboard       | 2             |
| 005                                | Appeals Dashboard        | 2             |

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- This report shows the number of employees on each project.

#### 4.0 Conclusions and Recommendations

The database project for Catalyst Healthcare Analytics successfully provides a platform for efficient data management for employees and projects. Utilizing a database reduces the rate of errors, enhances data integrity, and ensures reliable project and employee information. In addition, establishing a database over the current system (excel spreadsheet) allows for efficient retrieval of active and completed projects as well as real-time project tracking. Unlike excel, a database reduces redundancy by establishing relationships between tables which eliminates the need for duplicate data entry. This database can be improved by adding more attributes to track additional information such as estimated due date and project cost. Other enhancements that can be implemented are providing enhanced security measures and comprehensive training measures

to ensure employees are utilizing the database effectively. In conclusion, the Catalyst database will help contribute to quality metrics and structured data in an organized format, reducing data inconsistencies and improving data quality.